

REMARKS

Claims 1-23 were previously pending in this patent application. Claims 1-23 stand rejected. Herein, Claims 1-5 and 21 have been amended. Accordingly, after this Amendment and Response, Claims 1-23 remain pending in this patent application. Further examination and reconsideration in view of the claim amendments and arguments set forth below is respectfully requested.

SPECIFICATION

The specification has been amended to insert the correct Serial Number of the Provisional application on which this Patent Application claims priority. No new matter has been added.

35 U.S.C. Section 112, Second paragraph, Rejections

Claims 1-5 and 11-23 are rejected under 35 U.S.C. Section 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is stated at page 2 of the Office Action that the claim language of Independent Claim 1 is vague and indefinite. Further, it is stated that Independent Claim 1 claims a "multiply-MAC circuit", but fails to recite the necessary detail physical structures to perform the recited "multiply-MAC". Herein, Claims 1 have been amended to recite "A circuit for selecting a multiply operation or a MAC (multiply accumulate) operation ..." This makes clear that the "address" used for addressing the "first register" and the "second register" recited in Independent Claim 1 enables the selection of either 1) a multiply operation or 2) a multiply operation

and an accumulate operation which together are referred as a MAC (multiply accumulate) operation. Hence, Independent Claim 1 is clear and definite under 35 U.S.C. Section 112, second paragraph.

Moreover, dependent Claims 2-5 have been amended to remove the terms "multiply-MAC". Also, dependent Claim 2 has been amended to make it dependent on Independent Claim 1. Hence, dependent Claims 2-5 are clear and definite under 35 U.S.C. Section 112, second paragraph.

Further, it is stated at page 2 of the Office Action that Independent Claims 11 and 16 recite "a multiply-MAC circuit" for the "controller". However, Independent Claim 11 is directed to a "controller" and recites the terms "MAC (multiply accumulate) operation" and "multiply operation" rather than "a multiply-MAC circuit". As described above, a multiply operation and an accumulate operation together are referred as a MAC (multiply accumulate) operation. Continuing, Independent Claim 11 further recites "a first register", "a second register", "a multiplier circuit", and "an accumulator circuit", which provide sufficient physical structure for the "MAC (multiply accumulate) operation" and the "multiply operation". Hence, Independent Claim 11 is clear and definite under 35 U.S.C. Section 112, second paragraph. Furthermore, dependent Claims 12-15 are clear and definite under 35 U.S.C. Section 112, second paragraph for the reasons explained above.

Similarly, Independent Claim 16 is directed to a "controller" and recites the terms "accumulate operation" rather than "a multiply-MAC circuit". Also, this makes clear that the "address" used for addressing the "first register" and the "second register" recited in Independent Claim 16 enables or disables the selection of an accumulate operation. Hence, Independent Claim 16 is clear and definite under 35

U.S.C. Section 112, second paragraph. Furthermore, dependent Claims 17-20 are clear and definite under 35 U.S.C. Section 112, second paragraph for the reasons explained above.

Lastly, it is stated at page 2 of the Office Action that Independent Claim 21 is vague and indefinite because multiplication requires two operands. Herein, Independent Claim 21 has been amended to recite, "performing said multiply operation using said first data and a second data stored in a second register to generate a product value". Thus, Independent Claim 21 provides a multiplication operation using two operands (e.g., first data and second data). Hence, Independent Claim 21 is clear and definite under 35 U.S.C. Section 112, second paragraph. Furthermore, dependent Claims 22-23 are clear and definite under 35 U.S.C. Section 112, second paragraph for the reasons explained above.

In light of these arguments, withdrawal of the rejection of Claims 1-5 and 11-23 under 35 U.S.C. Section 112, second paragraph, is respectfully requested.

35 U.S.C. Section 103(a) Rejections

Claims 1-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Faith et al., U.S. Patent No. 6,483,343 (hereafter Faith). These rejections are respectfully traversed.

Independent Claim 1 recites:

A circuit for selecting a multiply operation or a MAC (multiply accumulate) operation comprising:

a first register operative to store a first data, wherein said first register is addressable using **a first address which enables said multiply operation and disables an accumulate operation** and is addressable using a **second address which enables a MAC operation**; and

a second register operative to store a second data, wherein said second register is addressable using a **third address which enables said**

multiply operation and disables said accumulate operation and is addressable using a ***fourth address which enables said MAC operation***. (emphasis added)

It is respectfully asserted that Faith does not disclose the present invention as recited in Independent Claim 1. In particular, the Office action (at page 3) cites Figure 6 and Col. 4, line 45 through Col. 6, line 25, as substantially disclosing the invention as claimed, including: a multiplier (152), an adder (154), an output register (162), a multiplexer (160), and first & second registers (24, 26). Further, the Office Action (at page 3) admits that Faith does not specifically disclose the claimed first/second registers are addressable using addresses that enable/disable a MAC operation. Continuing, it is argued that Faith provides the same desired result as claimed at the output of multiplexer (160).

Whether Faith provides the same desired result as claimed at the output of multiplexer (160) is irrelevant to establishing prima facie obviousness of the claimed invention of Independent Claim 1. All the claim limitations of Independent Claim 1 must be taught or suggested by the prior art in order to establish prima facie obviousness of claimed invention of Independent Claim 1. [MPEP 2143.03]. Since the Office Action (at page 3) admits that Faith does not specifically disclose the claimed first/second registers are addressable using addresses that enable/disable a MAC operation, prima facie obviousness has not been established.

Furthermore, Faith does not disclose the "first & second registers (24, 26)" described at page 3 of the Office Action. Also, Faith states that the modes of operation of the multiply-add-accumulate circuit (150) of Figure 6 are controlled by select terminals A, B, C, and D, which are decoded from a three bit instruction signal S[0:2] that is received by decode circuit (151). [Faith; Figure 6; Col. 6, lines 10-14].

Hence, instead of the addresses used for addressing a first and a second register, the three bit instruction signal S[0:2] enables/disables functions or operations (e.g., multiple, add, accumulate).

Unlike Faith, Independent Claim 1 is directed to a circuit for selecting a multiply operation or a MAC (multiply accumulate) operation. The circuit comprises a first register operative to store a first data, wherein the first register is addressable using a first address which enables the multiply operation and disables an accumulate operation and is addressable using a second address which enables a MAC operation. Further, the circuit includes a second register operative to store a second data, wherein the second register is addressable using a third address which enables the multiply operation and disables the accumulate operation and is addressable using a fourth address which enables said MAC operation. While Faith is directed to utilizing three bit instruction signal S[0:2] to enable/disable functions or operations, Independent Claim 1 is directed to utilizing addresses used for addressing a first and a second register to enable/disable functions or operations. Therefore, it is respectfully submitted that Independent Claim 1 is patentable over Faith and is in condition for allowance.

Dependent Claims 2-5 are dependent on allowable Independent Claim 1, which is allowable over Faith. Hence, it is respectfully submitted that Dependent Claims 2-5 are patentable over Faith for the reasons discussed above.

With respect to Independent Claim 6, it is respectfully submitted that Independent Claim 6 recites similar limitations as in Independent Claim 1. In particular, the circuit for selectively performing a multiply operation and a MAC

(multiply accumulate) operation of Independent Claim 6 includes a first register operative to store a first data, wherein the first register is addressable using a first address which indicates the multiply operation is selected and is addressable using a second address which indicates the MAC operation is selected. The circuit further includes a second register operative to store a second data, wherein the second register is addressable using a third address which indicates the multiply operation is selected and is addressable using a fourth address which indicates the MAC operation is selected. Therefore, Independent Claim 6 is allowable over Faith for reasons discussed in connection with Independent Claim 1.

Dependent Claims 7-10 are dependent on allowable Independent Claim 6, which is allowable over Faith. Hence, it is respectfully submitted that Dependent Claims 7-10 are patentable over Faith for the reasons discussed above.

With respect to Independent Claim 11, it is respectfully submitted that Independent Claim 11 recites similar limitations as in Independent Claim 1. In particular, the controller of Independent Claim 11 includes a first register operative to store a first data, wherein the first register is addressable using a first address which indicates the multiply operation is selected and is addressable using a second address which indicates the MAC operation is selected. The controller further includes a second register operative to store a second data, wherein the second register is addressable using a third address which indicates the multiply operation is selected and is addressable using a fourth address which indicates the MAC operation is selected. Therefore, Independent Claim 11 is allowable over Faith for reasons discussed in connection with Independent Claim 1.

Dependent Claims 12-15 are dependent on allowable Independent Claim 11, which is allowable over Faith. Hence, it is respectfully submitted that Dependent Claims 12-15 are patentable over Faith for the reasons discussed above.

With respect to Independent Claim 16, it is respectfully submitted that Independent Claim 16 recites similar limitations as in Independent Claim 1. In particular, the controller of Independent Claim 16 includes a first register operative to store a first data, wherein the first register is addressable using a first address which disables an accumulate operation and is addressable using a second address which enables the accumulate operation. The controller further includes a second register operative to store a second data, wherein the second register is addressable using a third address which disables an accumulate operation and is addressable using a fourth address which enables the accumulate operation. Therefore, Independent Claim 16 is allowable over Faith for reasons discussed in connection with Independent Claim 1.

Dependent Claims 17-20 are dependent on allowable Independent Claim 16, which is allowable over Faith. Hence, it is respectfully submitted that Dependent Claims 17-20 are patentable over Faith for the reasons discussed above.

With respect to Independent Claim 21, it is respectfully submitted that Independent Claim 21 recites similar limitations as in Independent Claim 1. In particular, the method of selectively performing a multiply operation and a MAC (multiply accumulate) operation of Independent Claim 16 includes writing a first data to a first register using one of a first address which indicates the multiply operation is

selected and a second address which indicates the MAC operation is selected.

Therefore, Independent Claim 21 is allowable over Faith for reasons discussed in connection with Independent Claim 1.

Dependent Claims 22-23 are dependent on allowable Independent Claim 21, which is allowable over Faith. Hence, it is respectfully submitted that Dependent Claims 22-23 are patentable over Faith for the reasons discussed above.

CONCLUSION

It is respectfully submitted that the above arguments and remarks overcome all rejections. For at least the above-presented reasons, it is respectfully submitted that all remaining claims (Claims 1-23) are now in condition for allowance.

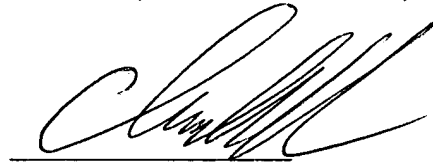
The Examiner is urged to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,

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